

Claims

What is claimed is:

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1. A radiant heat transfer panel for engagement with a fluid conduit comprising:  
a formed tray;  
said tray defining a thermal volume and a conduit channel;  
said volume containing a thermal mass;  
said channel, volume and thermal mass configured and arranged to permit heat transfer between said conduit and said thermal mass.
  - 10 2. The radiant heat transfer panel set forth in claim 1, wherein said conduit is plastic tubing.
  3. The radiant heat transfer panel set forth in claim 1, wherein said tray comprises a composition selected from a group consisting of polyvinyl chloride, polyethylene, polybutylene or thermoplastic material.
  - 15 4. The radiant heat transfer panel set forth in claim 1, wherein said tray comprises a fixture tower.
  5. The radiant heat transfer panel set forth in claim 1, wherein said tray includes a side gusset.
  6. The radiant heat transfer panel set forth in claim 1, wherein said conduit channel is a U-shaped trough.
  - 20 7. The radiant heat transfer panel set forth in claim 1, wherein said conduit channel is cylindrical.

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8. The radiant heat transfer panel set forth in claim 1, wherein said conduit channel comprises a linear section.

9. The radiant heat transfer panel set forth in claim 1, wherein said conduit channel comprises an arcuate section.

5 10. The radiant heat transfer panel set forth in claim 1, wherein said thermal mass comprises a composition selected from a group consisting of cement, mortar, ceramic, concrete or stone.

11. The radiant heat transfer panel set forth in claim 1, wherein said thermal mass has an outer surface and said outer surface is textured.

10 12. The radiant heat transfer panel set forth in claim 1, wherein said thermal mass has an outer surface and said outer surface is a finished flooring surface.

13. A radiant heat transfer panel for engagement with a conduit comprising:  
a thermal mass;

15 said thermal mass having a conduit channel;  
said conduit channel configured and arranged to permit heat transfer between said conduit and said thermal mass;  
whereby heat radiates from said panel.

14. A radiant heat system comprising:

20 multiple radiant heat transfer panels;  
each of said panels having a thermal mass and a conduit channel;  
a fluid conduit;  
said conduit communicating with an apparatus for heating said fluid;  
said multiple panels positioned adjacent each other such that said conduit extends through a series of said conduit channels;

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said panels, conduit and apparatus so configured and arranged to permit heat transfer from said fluid to said thermal mass of said panel;  
whereby heat radiates from said panels.

15. The radiant heat system set forth in claim 14, wherein said panel further comprises  
5 a formed tray.

16. The radiant heat system set forth in claim 14, wherein said fluid is water or glycol.

17. The radiant heat system set forth in claim 14, and further comprising an attachment  
spacer.

18. The radiant heat system set forth in claim 17, wherein said attachment spacer is  
10 wood.

19. The radiant heat system set forth in claim 14, and further comprising an edge  
spacer.

20. The radiant heat system set forth in claim 14, and further comprising a over-layer  
having a finished surface.

15 21. The radiant heat system set forth in claim 20, wherein said finished surface is a  
flooring surface selected from a group consisting of wood, carpet, tile or laminate.

22. The radiant heat system set forth in claim 14, and further comprising an under-  
layer.

23. The radiant heat system set forth in claim 22, wherein said panel is attached to said  
20 under-layer by mechanical bond or by mechanical fastener.

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24. The radiant heat system set forth in claim 14, and further comprising an attachment spacer and an over-layer and wherein said over-layer is attached to said attachment spacer by mechanical fastener.

25. The radiant heat system set forth in claim 14, wherein said multiple panels define  
5 an outer perimeter and said outer perimeter is immediately adjacent a standing wall.

26. The radiant heat system set forth in claim 14, and further comprising an edge spacer and a standing wall, and wherein said multiple panels define an outer perimeter, said wall defines an inner perimeter, and said edge spacer is between said outer perimeter and said inner perimeter.

10 27. The radiant heat system set forth in claim 14, wherein said panel has an outer surface and said outer surface defines a standing wall.

28. The radiant heat system set forth in claim 14, wherein said panel has an outer surface and said outer surface defines a ceiling.

29. A method of forming a radiant heat system comprising the steps of:  
15 providing an under-layer having a given area;  
providing multiple panels having a thermal mass and a conduit channel;  
providing conduit;  
positioning said conduit over or under said under-layer in a predetermined pattern corresponding to said conduit channels;  
20 positioning said panels over or under said under-layer such that said conduit extends through at least a portion of said conduit channels of said panels.

30. The method of forming a radiant heat system set forth in claim 29, and further comprising the step of attaching said panel to said under-layer.

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31. The method of forming a radiant heat system set forth in claim 29, and further comprising the step of attaching said conduit to an apparatus for heating fluid flowing through said conduit.

32. The method of forming a radiant heat system set forth in claim 29, and further comprising the step of using a filler substance to fill a fault or irregularity in said under-layer.

33. The method of forming a radiant heat system set forth in claim 29, wherein said panels are positioned over said under-layer and further comprising the step of positioning an over-layer over said panels.

10 34. The method of forming a radiant heat system set forth in claim 29, and further comprising the steps of providing an attachment spacer and positioning said attachment spacer adjacent at least one of said panels.

35. The method of forming a radiant heat system set forth in claim 34, and further comprising the step of attaching said attachment spacer to said under-layer.

15 36. The method of forming a radiant heat system set forth in claim 34, wherein said panels are positioned over said under-layer and further comprising the step of providing an over-layer.

37. The method of forming a radiant heat system set forth in claim 36, and further comprising the step of attaching said over-layer to said attachment spacer.

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